

Catalogue of American Amphibians and Reptiles.

SCHWARTZ, ALBERT. 1970. *Sphaerodactylus notatus*.

***Sphaerodactylus notatus* Baird**
Reef gecko

Sphaerodactylus [sic] *notatus* Baird, 1858:254. Type-locality, "Key West, (Monroe County), Florida." Holotype, presumably male, U. S. Natl. Mus. 3215, collected or donated by "Prof. Agassiz and Prof. W. H. B. Thomas," now missing and probably lost.

Sphaerodactylus notatus: Cope, 1862:500. Corrected spelling of generic name.

• **CONTENT.** Five subspecies are recognized: *notatus*, *atactus*, *exsul*, *amaurus*, and *peltastes* (Schwartz, 1965). See Comment.

• **DEFINITION.** A *Sphaerodactylus* with large, acute, strongly keeled, imbricate dorsal scales, without a middorsal zone of granules, and having the ventral, gular, and chest scales smooth. There are 0-2 internasal scales, and usually 3 upper labials to the center of the eye. The ground color is brown, with a sexually dichromatic pattern of spotted head and back in males, longitudinally lined head in females, and a dark scapular spot and included pale ocelli present or absent in both sexes. Adult size is 24 to 34 mm snout to vent, dorsal scales from axilla to groin range from 23 to 38, scales around midbody 35 to 55, and fourth toe lamellae 5 to 13. The male escutcheon is a large median patch 2 to 7 scales long and 7 to 29 scales across, with branches extending on the undersides of the thighs almost to the knees.

• **DESCRIPTIONS.** Barbour (1921) presented descriptions of several populations of *S. notatus*. Schwartz (1965) described in detail all populations of *S. notatus* and discussed geographic and individual variation. Florida *S. notatus* have been described by Cope (1900), Burt (1937), Carr (1940), Smith (1946), and Carr and Goin (1955).

• **ILLUSTRATIONS.** Cope (1900) figured the scutellation of *S. n. notatus*. Barbour (1921) presented drawings of a female *S. n. atactus* from Monte Libano, Oriente Province, Cuba, and of the male holotype of *S. n. exsul* from Little Swan Island, and included drawings of head scutellation (dorsal, lateral and ventral), and sections of middorsal scales of *S. n. atactus* from the Isla de Pinos and of *S. n. exsul*. Smith (1946) gave dorsal, ventral, and lateral view photographs of male and female *S. n. notatus* from Key West. Color photographs of male and female *S. n. notatus* (as "spotted" and "striped" phases) from the Florida Keys are in Conant (1958). Carr and Goin (1955) figured a male and a female of *S. n. notatus* (as "spotted" and "striped" phases).

• **DISTRIBUTION.** *Sphaerodactylus notatus* occurs in the West Indies (Cuba, Isla de Pinos), Bahamas (Little Bahama Bank and Great Bahama Bank, Great Inagua), Little Swan Island in the western Caribbean, the Morant Cays southeast of Jamaica, and southeastern Florida and the Florida Keys, including the Dry Tortugas. The few specimens from Great Inagua and Morant Cays were probably introduced by man (Schwartz, 1965). *S. notatus* shows wide ecological tolerance, occurring in tropical hammock in Florida, in hardwood forest in Cuba and the Isla de Pinos, and among fallen dead leaves of *Coccoloba* and *Terminalia* in open beach situations throughout its range. The species is not confirmedly edificarian, but it does not shun the vicinity of human habitations and their associated trash in the tropics and subtropics. Altitudinal range is from sea level to lower montane slopes (Sierra Maestra, Sierra del Guaso, Sierra del Rosario in Cuba).

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** Wermuth (1965) gave a synonymy of the species. Schwartz (1965) discussed distribution and geographic variation in detail. Habits, as correlated with subdigital lamellar count, were mentioned by Collette (1962); habitat and egg size by Mittleman (1950); egg size and place of deposition by Carr (1940) and Duellman and Schwartz (1958); sexual dichromatism by Grant (1958); and the habit of licking the eyes by Smith (1952). Barbour and Ramsden (1919) commented on habits, habitat, and eggs in Cuba.

• **ETYMOLOGY.** The name *notatus* (Latin) means "marked," an allusion to the spotted pattern of males of the nominate subspecies. Subspecific names include *exsul* (Latin, "exile") in reference to the far-removed locality for this subspecies on Little Swan Island; *atactus* (Greek, "irregular") in reference to the variability of occurrence of the scapular spot and ocelli; *amaurus* (Greek, "blind") in allusion to the absence of scapular spots and ocelli; and *peltastes* (Greek, "one who bears a target") alluding to the scapular spot and ocelli.

1. *Sphaerodactylus notatus notatus* Baird

Sphaerodactylus [sic] *notatus* Baird. See species account.

Sphaerodactylus notatus notatus: Schwartz, 1965:164. First use of trinomial.

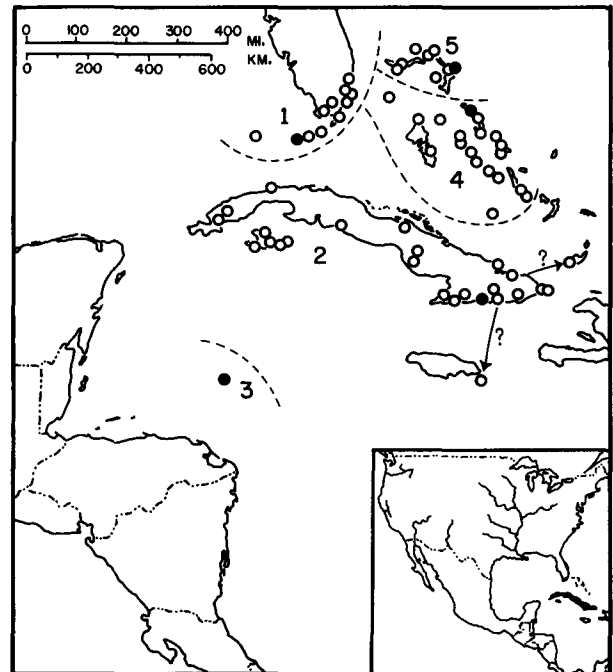
• **DEFINITION.** This subspecies is characterized by moderate size (males to 29 mm, females to 30 mm snout-vent length), moderate number of dorsal scales between axilla and groin (22-29, mean 23.8 ± 0.40), moderate number of scales around midbody (41-48, 44.3 ± 0.36), throats of adult males heavily spotted with dark brown, and presence of a dark scapular patch and two pale ocelli in juveniles and adult females (absent in adult males).

• **REMARKS.** A record from Mobile, Alabama (Burt, 1937) was probably based on an introduction. The species has not been found there again.

2. *Sphaerodactylus notatus atactus* Schwartz

Sphaerodactylus notatus atactus Schwartz, 1965:166. Type-locality, "7 miles west of Aserradero, Oriente Province, Cuba." Holotype, female, Amer. Mus. Nat. Hist. 92820, collected by Ronald F. Klinikowski, David C. Leber, Albert Schwartz, and James D. Smallwood on 12 August 1960.

• **DEFINITION.** This subspecies is characterized by moderate size (males to 29 mm, females to 30 mm snout-vent length), low number of dorsal scales between axilla and groin (18-23, 22.1 ± 0.30), low number of scales around midbody (36-49, 41.9 ± 0.40), adult male dorsal pattern usually not heavily spotted, throat spotting present or absent in adult males, and adults of both sexes with or without scapular spot and ocelli.



MAP. Solid symbols mark type-localities; hollow symbols are other known localities. Question marks indicate possible origin of introduced populations.

• **REMARKS.** Although *S. n. atactus* has been reported from Cuba and the Isla de Pinos, Schwartz (1965) noted that material from the Isla de Pinos and the Archipiélago de los Canaréos to the east differs in some pattern and scutellation details from Cuban specimens and suggested that the lizards from this Archipiélago might be subspecifically different. *Sn. n. atactus* is known from one specimen from Great Inagua Island in the southeastern Bahamas and two from Northeast Cay in the Morant Cays off the southeastern tip of Jamaica. Schwartz (1965) suggested that these isolated records stem from accidental human introduction from Cuba or the Isla de Pinos.

3. *Sphaerodactylus notatus exsul* Barbour

Sphaerodactylus exsul Barbour, 1914:264. Type-locality, "Little Swan Island, Caribbean Sea." Holotype, male, Mus. Comp. Zool. 7894, collected by George Nelson in March, 1912.
Sphaerodactylus notatus exsul: Schwartz, 1965:170.

• **DEFINITION.** This subspecies is characterized by small size (males to 24 mm, females to 23 mm snout-vent length), moderate number of dorsal scales between axilla and groin (23-29, 25.8 ± 0.45), low number of scales around midbody (37-44, 41.5 ± 0.55), throats of males with some dark patterning of dots or lines, presence of a scapular patch and ocelli in both sexes, and small escutcheon in males.

4. *Sphaerodactylus notatus amaurus* Schwartz

Sphaerodactylus notatus amaurus Schwartz, 1965:171. Type-locality, "Alicetown, Eleuthera [Island], Bahama Islands." Holotype, female, Mus. Comp. Zool. 77162, collected by natives on 3 November 1961.

• **DEFINITION.** This subspecies is characterized by small size (males and females to 26 mm snout-vent length), high number of dorsal scales between axilla and groin (23-33, 27.3 ± 0.24), high number of scales around midbody (41-54, 46.7 ± 0.32), adult male pattern usually not heavily spotted, throat weakly spotted to immaculate in males, and absence of scapular spot in both sexes (occasionally barely indicated in females).

• **REMARKS.** *S. n. amaurus* is widely distributed on the islands of the Great Bahama Bank. It has been reported from South Bimini, Andros, New Providence, Eleuthera, Long, Cat, the Exuma Cays (including Great Exuma and Little Exuma), and the Ragged Cays.

5. *Sphaerodactylus notatus peltastes* Schwartz

Sphaerodactylus notatus peltastes Schwartz, 1965:175. Type-locality, "Hopetown, Elbow Cay, off Great Abaco [Island], Bahama Islands." Holotype, female, Amer. Mus. Nat. Hist. 74752, collected by George B. Rabb, 4 May 1953.

• **DEFINITION.** This subspecies is characterized by large size (males to 33 mm, females to 34 mm snout-vent length), high number of dorsal scales between axilla and groin (25-35, 30.1 ± 0.21), high number of scales around midbody (46-55, 49.9 ± 0.28), and a scapular spot at least indicated in some individuals of both sexes.

• **REMARKS.** *S. n. peltastes* occurs on the islands of the Little Bahama Bank (Grand Bahama, Great Abaco and its associated cays, Little Abaco, Stranger's Cay, Water Cay, Mores Island). Schwartz (1965) pointed out striking differences in pattern between specimens from various islands on the Little Bahama Bank, and suggested that the lizards of Grand Bahama and Water Cay might be separated nomenclatorially from Abaco lizards.

COMMENT

Sphaerodactylus notatus is part of a complex of large-scaled sphaerodactyls of the Antillean region. In the southern Bahamas is found *S. inaguae* Noble and Klingel, and on Hispaniola occurs *S. difficilis* Barbour. Farther removed geographically, but similar in scutellation and pattern (dark scapular spot and included ocelli) is *S. macrolepis* Günther of Puerto Rico, the Virgin Islands, and the northern Lesser Antilles.

Schwartz (1965) suggested that *S. inaguae* and *S. difficilis* are related to *S. notatus*, but retained them as distinct species pending clarification of variation in Hispaniolan *S. difficilis*. In many details *S. inaguae* is closer to *difficilis* than to the more northern *S. notatus*. Shreve (1968) combined *S. difficilis* with *S. notatus* and named three new Hispaniolan subspecies (*randi*, *savagei*, *juanilloensis*). However, Shreve did not compare his new subspecies with those already described, and his method of counting scales is not comparable to that of Schwartz (1965). Although there is little doubt that *notatus*, *inaguae*, and *difficilis* are members of a group of related species, the relationships of these three taxa with the *macrolepis* complex in Puerto Rico should be taken into consideration before additional nomenclatural changes are made. It is preferable at this time to limit *S. notatus* to the forms treated herein, while recognizing that *S. inaguae* and *S. difficilis* (with its subspecies) may at some future date be considered subspecifically related to *S. notatus*.

LITERATURE CITED

- Baird, Spencer F. 1858. Description of new genera and species of North American lizards in the Museum of the Smithsonian Institution. Proc. Acad. Nat. Sci. Philadelphia 11: 253-256.
- Barbour, Thomas. 1914. A contribution to the zoogeography of the West Indies, with especial reference to amphibians and reptiles. Mem. Mus. Comp. Zool. 44 (2):209-359.
- 1921. *Sphaerodactylus*. Mem. Mus. Comp. Zool. 47 (3): 217-278.
- and Charles T. Ramsden. 1919. The herpetology of Cuba. Mem. Mus. Comp. Zool. 47 (2):71-213.
- Burt, Charles E. 1937. The lizards of the southeastern United States. Trans. Kansas Acad. Sci. 40:349-366.
- Carr, Archie F. 1940. A contribution to the herpetology of Florida. Univ. Florida Biol. Sci. Ser. 3 (1):1-118.
- and Coleman J. Goin. 1955. Guide to the reptiles, amphibians, and freshwater fishes of Florida. Univ. Florida Press, Gainesville. ix + 339 p.
- Collette, Bruce B. 1962. Arboreality, lamellae, and body size in two species of Cuban geckos. Copeia 1962 (3):644-645.
- Conant, Roger. 1958. A field guide to reptiles and amphibians of the United States and Canada east of the 100th meridian. Houghton Mifflin Co., Boston. xviii + 366 p.
- Cope, Edward D. 1862. On the genera *Panolopus*, *Centropyx*, *Aristelliger* and *Sphaerodactylus*. Proc. Acad. Nat. Sci. Philadelphia (for December 1861) 13:494-500.
- 1900. Crocodilians, lizards and snakes of North America. Rept. U. S. Natl. Mus. (for 1898):153-1270.
- Duellman, William E. and Albert Schwartz. 1958. Amphibians and reptiles of southern Florida. Bull. Florida State Mus. 3 (5):181-324.
- Grant, Chapman. 1958. Sexual dichromatism in *Sphaerodactylus notatus* (Reptilia: Lacertilia). Herpetologica 14 (3):184.
- Mittleman, M. B. 1950. Miscellaneous notes on some amphibians and reptiles from the southeastern United States. Herpetologica 6 (1):20-24.
- Schwartz, Albert. 1965. Geographic variation in *Sphaerodactylus notatus* Baird. Rev. Biol. Trop. 13 (2):161-185.
- Shreve, Benjamin. 1968. The *notatus* group of *Sphaerodactylus* (Sauria, Gekkonidae) in Hispaniola. Breviora (280): 1-28.
- Smith, Hobart M. 1946. Handbook of lizards: lizards of the United States and of Canada. Comstock Publ. Co., Ithaca, New York. xxi + 557 p.
- 1952. A behavioral analog of brillar eyelids in spectacled geckos. Herpetologica 8 (3):95-96.
- Wermuth, Heinz. 1965. Gekkonidae, Pygopodidae, Xantusiidae. Das Tierreich, Berlin (80):xxii + 246 p.

ALBERT SCHWARTZ, MIAMI-DADE JUNIOR COLLEGE, MIAMI, FLORIDA 33167.

Published 16 January 1970 by the American Society of Ichthyologists and Herpetologists. Publication is supported by National Science Foundation grant G24231.

Primary editor for this account, Clarence J. McCoy.